

4. On the Acclimatization of the Indian Mungoos in Jamaica. By W. BANCROFT ESPEUT, F.L.S.

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In 1871 the loss in sugar-cultivation in Jamaica from the ravages of rats was so great that I was convinced that something more than poison, traps, &c. was required to reduce it, if sugar-culture was to continue. For nearly 200 years the sugar-planters have had to contend with this serious difficulty; and on most estates from £200 to £300 a year have been expended in destroying the rats by poison, traps, and baits, and in ratcatchers and dogs. This expenditure, however, only represented a fraction of the loss resulting from the injury and destruction of the canes, and of the sugar they contained.

Besides the ordinary Black and Brown Rats of Europe, the Island was infested with the Grey Rat, or, as it is locally called, "Cane-piece Rat" (*Mus saccharivorus*). Whence the species came is known to no one; probably it is indigenous, as it is found in Cuba, Porto Rico, and other islands. The Brown and Black Rats cause comparatively small loss; but the Grey Rat is most destructive. Nesting in old stone walls, in holes in wet banks and tree-roots (but not on trees like the Black Rat), it falls an easy prey to terriers; but as dogs suffer much from injuries to their eyes in traversing cane-fields, owing to the serrated edges of the leaves and the spines on the young plants, it was futile to expect much relief from them.

More than 100 years ago Sir Charles Price, then a large sugar-planter, introduced ferrets and English rat-catchers; but the ferrets were destroyed by chigoes, and were of little use. Tradition says Sir Charles Price then obtained from Central America some other animal; but nothing is certainly known about this; certainly no animal belonging to the Musteline group exists in the island. Confounding the ferrets with the Grey Rat, the negroes appear to think Sir Charles Price introduced the latter; and, in consequence of this strange error, they even now call the Grey or Cane-piece Rat "Massa Price's Ratta."

In 1844 Mr. Anthony Davis imported from Barbadoes some two dozen Agua Toads (*Bufo aqua*), in the hope that they would mitigate the rat plague. These toads were introduced from Cayenne into Martinique, and thence to Barbadoes, and were regarded as useful in destroying the young rats. But in Jamaica they certainly proved not only valueless, but a nuisance: the noise they make is most disagreeable; and they are very destructive to poultry, chickens, and eggs.

Sir Stamford Raffles, the first President of this Society, introduced into Jamaica from Cuba the *Formica omnivora*, now known locally as the "Raffle ant." This formidable insect certainly keeps

the rats down in those districts in which it thrives ; but it is very local, and attempts to remove it from one district to another rarely succeed. Besides destroying the young of rats, it is most injurious to the young of all kinds of animals and birds. Chickens, puppies, colts, and even calves have been killed by the Raffle ant.

In 1871 I was suffering unusually from rats on Spring Garden Estate ; and in talking over possible remedies, my wife suggested the introduction of the Mungoos from India. Some years before, Mrs. Espeut had been in Ceylon with her father, Colonel Armit, R.E., and had there possessed an Indian Mungoos as a pet. She had often seen the animal destroy rats, and advised me to introduce it into Jamaica. On making further inquiries, I found nothing against the proposal, and very much in favour of it. A captain of a ship assured me a Mungoos had cleared his ship of rats in a few weeks ; and friends who had been stationed in India gave very satisfactory accounts of it as a rat-destroyer.

I at once wrote to the Government of Jamaica, asking permission to obtain some Mungooses from India by the Coolie ships ; but difficulties were placed in the way at first, and it was only after repeated and urgent solicitation on my part that Sir J. Grant gave the necessary orders to the emigration agent at Calcutta. In 1872, on the 13th February, by the East-Indian ship 'Merchantman,' I received 9 of these animals, 4 males and 5 females, one large with young. I paid for them £9, "in reimbursement of cost attending the procuring and transmitting." I let these nine animals out in four lots, three pairs and one lot of three, the latter near my house, the others in suitable parts of the sugar-field. Within a few months young ones were seen about ; and in less than six months there was evidence, clear and certain, that the rats were much less destructive than had ever been known. Fewer rats were caught and fewer canes were destroyed, month after month ; within two years the expenditure for killing rats ceased almost entirely, and in another year I enjoyed relief and immunity ; and ever since the losses from rats have been a mere trifle.

Within a very short time (three years) neighbouring estates found a similar benefit ; and some of my brother sugar-planters, who had laughed at me for supposing the Mungoos would do any good, began to buy all they could procure from the natives, who, setting traps on my lands, stole all the Mungooses they could obtain, and sold them at prices ranging from £1 at first down to 5s. each in the last few years. By this means, and naturally, the Mungoos has now become general all over the island ; and the beneficial results of the introduction of this useful animal may safely be taken as exceeding £150,000 a year. Mr. Morris, the Government Botanist, states, "it might very safely be estimated at not less than £100,000 per annum." As a single instance of the good arising from the introduction of the Mungoos, I may refer to the exports of chocolate (cocoa). Owing to the ravages of the rats, it was impossible to grow cocoa : the exports in 1875 were only 311 cwt., valued at £873. In 1880, only five years after, the exports were 3304 cwt. valued at

£10,918 ; and this industry is becoming largely extended yearly, as people find they can grow cocoa now, because the rats no longer destroy the cocoa as they used to do before the Mungoos was introduced. Coffee-planters admit they lose scarcely any thing now from rats, whilst at one time they suffered nearly as badly as the sugar-planters. It is now possible to grow and reap maize, peas, and many other vegetables, which but a few years ago were eaten wholesale by rats, and could not be grown without loss.

Besides the rats, snakes, lizards, crabs, toads, and the grubs of many beetles and caterpillars have been destroyed to a large extent by the Mungoos. Unfortunately, ground-nesting birds, the Quail and others, have been diminished ; but the loss of poultry is not as great from the Mungoos as it was from rats, snakes, &c. before the introduction of the former.

Since the introduction by me of the nine Mungooses in February 1871, several others have been obtained from India by other planters, viz. Mr. M'Phail, Mr. Burgess, &c. ; but they were few in number, and are known in some cases to have died without leaving any progeny. Mr. Morris, in his letter of the 24th Feb. 1882 (published in the 'Field' of the 6th of May of that year), appears to think that some Mungooses had been introduced into Jamaica earlier than my importation ; but I certainly never heard of this, and I think Mr. Morris has been misinformed. I do not think I could have failed to hear of it, considering all I wrote on the subject in 1871. I am inclined to think he has confounded subsequent importations with the alleged previous introduction. I know that several Mungooses, purchased in Leadenhall Market, were sent to Jamaica shortly after I got the nine from India, and that they all perished. Mr. Morris says :— "From these nine animals nearly, if not all the Mungooses in the island at the present time have been obtained. Hence among the natives the Mungoos is known as 'Massa Espeut's Ratta.'"

Besides the many hundreds of Mungooses trapped on Spring Garden and sold to planters in Jamaica, large numbers have been sent by myself and others to Cuba, Porto Rico, Grenada, Barbadoes, Santa Cruz, and elsewhere. In every case I have had good accounts of the great benefit arising from their introduction.

I question much if such enormous benefit has ever resulted from the introduction and acclimatization of any one animal, as that which has attended the Mungoos in Jamaica and the West Indies ; and I marvel that Australia and New Zealand do not obtain this useful animal in order to destroy the plague of Rabbits in those countries. Much interesting information on the subject will be found in Mr. Morris's letter already referred to.

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